

P1121

Evaluation of Sorghum Grain Quality for QTL Analysis and Marker Assisted Recurrent Selection
(MARS)

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Room: Grand Exhibit Hall

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Sorghum breeding in Mali mostly focuses on varieties for human consumption. Even if most of breeding efforts concentrate on productivity and adaptation, grain quality is a very important aspect to consider for improved material to be adopted and successful. One major traditional use of sorghum in West-Africa is the tô, a thick porridge prepared from sorghum flour. We evaluated several important technological traits involved in tô quality (pericarp thickness, dehulling yield, endosperm texture, grain roundness and size, amylose content, presence or not of anthocyan) in two F3 populations of 400 families each. Near infrared reflectance spectroscopy (NIRS) was investigated as an indirect method to evaluate some of these traits on sorghum grain rather than on flour. QTLs for these traits were detected and the interaction between QTLs evaluated. The consistency and color of tô were evaluated on mini-tô prepared from 200 families. QTLs for tô consistency were compared with those for technological traits. Several QTLs were detected including major QTLs, explaining 92% of the variation for the presence of anthocyan, 55% for pericarp thickness, and 22% for dehulling yield. A QTL explaining 19% of grain roundness and 11% for endosperm texture was also found. These QTLs are being used together with QTLs for grain yield, flowering time, plant and panicle morphology, to select varieties adapted for making good tô and combining productivity and grain quality through integrated marker assisted recurrent selection.

Handouts

 [Diarah_poster.pdf](#) (1.2 MB)

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Meeting Information

When:
January 10 - 15, 2014
Where:
San Diego, CA